

WHAT IS CLAIMED IS:

1. A valve for a safety tire, equipped with a charging opening for charging gas into an outer gas chamber and an inner gas chamber, which are provided in a tire having a double structure, said valve for a safety tire comprising:

an air-supply passage for an inner gas chamber, which causes the charging opening and the inner gas chamber to communicate with each other;

an air-supply passage for an outer gas chamber, which causes the charging opening and the outer gas chamber to communicate with each other;

a nonreturn valve member for an inner gas chamber, provided in said air-supply passage for an inner gas chamber, said nonreturn valve member for an inner gas chamber allowing gas to flow from the atmospheric side into the gas chamber and making it possible to prevent gas from flowing from the gas chamber into the atmosphere, and also allowing gas to flow from the gas chamber into the atmosphere by carrying out a predetermined operation; and

a nonreturn valve member for an outer gas chamber, provided in said air-supply passage for an outer gas chamber, said nonreturn valve member for an outer gas chamber allowing gas to flow from the atmospheric side into the gas chamber and making it possible to prevent gas from flowing from the gas chamber into the atmosphere, and also allowing gas to flow from the gas chamber into the atmosphere by carrying out a predetermined operation.

2. The valve for a safety tire according to claim 1, wherein detachment-restraining means for restraining detachment of said nonreturn valve member for an outer gas chamber is provided in said air-supply passage for an outer gas chamber at a position nearer to the charging opening than said nonreturn valve

member for an outer gas chamber.

3. The valve for a safety tire according to claim 1 or claim 2, comprising an engaging portion that allows a filling adapter with a coupler, which supplies gas by engaging with the charging opening so as to make a pressure difference between said air-supply passage for an inner gas chamber and said air-supply passage for an outer gas chamber, to be mounted at the charging opening in only a fixed direction.

4. A filling adapter with a coupler, for charging gas from a gas supply source into an outer gas chamber and an inner gas chamber of a tire having a double structure, said filling adapter comprising:

a main body portion engaging with the valve for a safety tire according to claim 1 or claim 2; and

differential pressure setting means provided in said main body portion and distributing gas from the gas supply source to the air-supply passage for an inner gas chamber and the air-supply passage for an outer gas chamber so as to generate a pressure difference therebetween.

5. A pressure releasing adapter used in a safety tire-rim assembly equipped with a pneumatic tire, an expandable air pocket provided within the pneumatic tire and forming an inner gas chamber, a rim which forms an outer gas chamber between the pneumatic tire and the air pocket when the pneumatic tire and the air pocket are mounted, and the valve for a safety tire according to any one of claim 1 to claim 3, said pressure releasing adapter being used to release gas both in the inner gas chamber and in the outer gas chamber to the atmosphere, and comprising:

a main body portion that can engage with said valve for a safety tire; and  
operating means provided in said main body portion and causing gas in the inner gas chamber and gas in the outer gas chamber to be released to the atmosphere so as not to expand said air pocket, by carrying out a predetermined operation with respect to the nonreturn valve member for an inner gas chamber and the nonreturn valve member for an outer gas chamber of said valve for a safety tire when said main body portion is engaged with said valve for a safety tire.

6. A pressure releasing method for releasing, to the atmosphere, gas in an inner gas chamber and gas in an outer gas chamber of a safety tire-rim assembly equipped with a pneumatic tire, an expandable air pocket disposed within the pneumatic tire and forming the inner gas chamber, a rim that forms the outer gas chamber between the pneumatic tire and the air pocket when the pneumatic tire and the air pocket are mounted, and the valve for a safety tire according to any one of claim 1 to claim 3,

wherein the nonreturn valve member for an inner gas chamber is removed in advance of the nonreturn valve member for an outer gas chamber.

7. A pressure releasing method for releasing, to the atmosphere, gas in an inner gas chamber and gas in an outer gas chamber of a safety tire-rim assembly equipped with a pneumatic tire, an expandable air pocket disposed within the pneumatic tire and forming the inner gas chamber, a rim that forms the outer gas chamber between the pneumatic tire and the air pocket when the pneumatic tire and the air pocket are mounted, and the valve for a safety tire according to any one of claim 1 to claim 3,

wherein gas in the inner gas chamber and gas in the outer gas chamber are released to the atmosphere by engaging, with said valve for a safety tire, a pressure releasing adapter including operating means which operates the nonreturn valve member for an inner gas chamber and the nonreturn valve member for an outer gas chamber at the same time or which operates the nonreturn valve member for an inner gas chamber in advance of the nonreturn valve member for an outer gas chamber.

8. The pressure releasing method according to claim 7, wherein said operating means includes a first protruding portion for operating said nonreturn valve member for an inner gas chamber, and a second protruding portion for operating said nonreturn valve member for an outer gas chamber, and said first protruding portion is longer than said second protruding portion.